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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,543	01/10/2001	Kazunori Ozawa	P/1929 -78	2859
2352	7590	11/04/2003	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			LEWIS, MICHAEL A	
		ART UNIT	PAPER NUMBER	
		2655	7	
DATE MAILED: 11/04/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/743,543	OZAWA, KAZUNORI
	Examiner Lewis A Michael	Art Unit 2655

--The MAILING-DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-5 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.  
 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.  
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. 
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3 &amp; 5</u> .	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1, recites the limitation "said decision circuit" in line 20. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa et al. (U.S. Patent 5778334)

Regarding claim 1, Ozawa et al. disclose a speech coding device:

- a. A "Spectrum Quantization Circuit"(5).

"Spectral parameter quantizer.... that calculates spectral parameters for each subframe...using a quantization codebook" (Col 4, Line 21).

- b. An "Adaptive Codebook Circuit"(10).

“Adaptive codebook...that receives spectrally weighted speech signal ...outputs both the calculated result and an adaptive codebook predictive residual signal” (Col 4, Line 34).

- c. A “Sound Source *[Excitation]* Quantization Circuit”(13).  
“excitation *[sound source]* quantizer .... that selects optimum codevector selects an optimum excitation codebook *[sound source]* ....” (Col 4, Line 42).
- d. A “Gain Quantization Circuit” (15).  
“A gain quantizer that selects an optimum gain codebook .... Such that error power between said adaptive codebook predictive residual signal and a speech signal synthesized ...” (Col 4, Line 48).
- e. A “Mode Decision *[Classification]* Circuit” (19)  
“A mode classification means that ... classifies the speech signal ... as one of a plurality of predetermined speech modes... ”(Col 17, Line 27).
- f. A “Multiplexer Unit”(17)  
“multiplexer means for multiplexing the parameters extracted from the spectral calculator ...” (Col 4, Line 54).
- h. A Lag *[Shift]* Calculator (Fig. 7)

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"a) reading the bit number allocation pattern that describes a number of bits.....

b) setting lag search ....

c) calculating pitch prediction distortion .....

d) calculating accumulated distortion of a plurality of lag values ...

e) repeating processes (b) through (d) above for each of the bit number allocation patterns;

f) selecting a bit number allocation which minimizes the accumulated distortion....

g) calculating lag by means of a closed loop search using lags calculated in process in process (f) as lag candidates."

(Col 4,Line 66 – Col 5,Line 22).

*Note: The objective or motivation of the algorithm in Ozawa et al. is to choose the shift amount and a code vector that will minimize distortion between an input signal and a synthesized signal, see Fig. 1-9.*

Regarding claim 2, Ozawa et al. show the predetermination of pulses and the shift amounts for shifting the position of the pulses.

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"a correction codebook that stores ....values of deviation from true values...wherein the values of the deviation are calculated in advance" ( Col 10, Line 15).

4. Claim 4 rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa et al.  
(U.S. Patent 5659661)

Ozawa et al. disclose a speech decoding device:

- a. A "Demultiplexer"(100)  
"A demultiplexer for receiving and separating an index concerning spectrum parameter, an index concerning amplitude.... concerning excitation signal" (Col 7, Line 5)
- b. A "synthesis Filter"(140)  
"A synthesis filter unit for restoring...obtaining a synthesized signal ... " (Col 7, Line 27)
- c. A "sound source signal generation unit"(120 & 125)  
"... An excitation [sound source] codebook unit coupled to the excitation codebook and the demultiplexer..." (Col 7, Line 13).

d. An Adaptive codebook (110)

"An adder coupled to the adaptive codebook unit and the excitation codebook unit...and to output a drive signal as a result" (Col 7, Lines 15 – 26, Col 7, Line 5), see Figure 1.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 3 is rejected under 35 U.S.C. 103(a) as being anticipated by Ozawa et al. (U.S. Patent 5778334) in view of Takahashi et al. (U.S. Patent 672459).

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Ozawa et al. disclose the prior art discussed in paragraph 1 of this document.

Ozawa et al. do not teach the use of a random generator for generating random pulses. However, Takahashi et al. teach,

“...random signal generator for generating a random means and a non-voice sound source predicting part” (Col 4 , Line37).

One of the main objectives of any voice coder is to provide a voice signal coding apparatus capable of reproducing a natural sound for signals in non-voice periods.

Therefore, it would have been obvious for one of ordinary skill at the time of invention to modify Ozawa et al. by adding a random generator as a source of generating pulses as taught by Takahashi et al. in order to achieve the most efficient method of coding of natural sounding unvoiced frames.

8. Claims 5 is rejected under 35 U.S.C. 103(a) as being anticipated by Ozawa et al. (U.S. Patent 5659661) in view of Takahashi et al. (U.S. Patent 672459).

Ozawa et al. disclose prior art discussed in paragraph 4 of this document. Ozawa et al. do not teach the use of a random generator with the excitation codebook for unvoiced sound. However, Takahashi et al. teaches:

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"... non-voice sound source predicting part including a random signal generator for generating a random signal representing a sound source signal" (Col 14 , Line35).

One of the main objectives of any voice decoder is to provide a voice signal decoding apparatus capable of reproducing a natural sound for signals in non-voice periods.

Therefore, it would have been obvious for one of ordinary skill at the time of the invention to modify Ozawa et al. by the use of a random generator as a source of generating pulses as taught by Takahashi et al. in order to achieve the most efficient method of decoding of natural sounding unvoiced frames.

### ***Conclusion***

**9. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872 9314,  
(for informal or draft communications, please label "PROPOSED" or  
"DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Lewis, telephone number (703)305-8730. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached at (703)305-4827. The facsimile phone number for this group is (703)872-9314.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

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10/9/2003

*Doris H. To*  
10/30/03  
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